Docket No. 19947-6A

PATENT

CERTIFICATE OF MAILING

I hereby certify that this paper is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop Appeal Brief-Patents; Commissioner for Patents; P.O. Box 1450; Alexandria, VA 22313-1450 on October 23, 2006.

Bonnie S. Doell

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

Applicant:	Daniel A. Wilson et al	:	
Serial No.:	10/607,514	:	Group Art Unit: 1774
Filed:	June 26, 2003	:	Examiner: Gray, Jill M.

For: **Optical Fiber Ribbons Containing Radiation Cured Encapsulating Materials**

TRANSMITTAL OF APPEAL BRIEF

Dear Sir:

Submitted herewith is an Appeal Brief in support of the Notice of Appeal filed August 23, 2006. Please charge the amount of $500.00 for payment of the government fee for filing the present Appeal Brief to our Visa credit card account. Form PTO-2038 is attached.

Please charge any additional fees required or credit any excess in fees paid in connection with the present communication to Deposit Account No. 04-1133.

Respectfully submitted,

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APPEAL BRIEF

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

The present Appeal Brief is submitted in support of the Notice of Appeal filed on August 23, 2006.

I. REAL PARTY IN INTEREST

The real party in interest in this appeal is the assignee of the present application, Hexion Specialty Chemicals, Inc.

II. RELATED APPEALS AND INTERFERENCES

There are no other prior or pending appeals, interferences, or judicial proceedings known to the Appellants, the Appellants' undersigned legal representative or the assignee

which may be related to, directly affect or be directly affected by or having a bearing on the Board's decision in the present appeal.

III. STATUS OF THE CLAIMS

Claims 29-40 and 44-50 are pending in the present application, stand rejected, and are the subject of the present appeal. Claims 1-28, 41-43, 51 and 52 have been cancelled.

IV. STATUS OF AMENDMENT

An Amendment Under 37 C.F.R. §1.116 was filed by Certificate of Mail on July 21, 2006, subsequent to the final rejection set forth in the Official Action dated February 23, 2006. The Advisory Action dated August 4, 2006 indicated that the Amendment would be entered for purposes of appeal.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The present invention is directed to radiation cured encapsulating materials (specification, page 1, lines 2-8).

More particularly, independent claim 29 recites a radiation cured encapsulating material having a tear resistance of less than about 2.20 pounds force, an adhesion force to an underlying surface material of greater than about 0.0044 pounds force, and a Young's modulus at 25°C in the range of from about 3000 to about 15,000 psi (specification, page 4, lines 17-20; page 11, lines 23-24).

Claim 30 recites that the radiation cured encapsulating material of claim 29 has a percent elongation at break of at least about 5% (specification, page 11, lines 4-5). Claims 31 and 32 further define the radiation cured encapsulating material of claim 30 as having a tear resistance of less than about 1.10 pounds force, a percent elongation at break of at least about

10%, and an adhesion force to an underlying surface material of greater than about 0.011 pounds force (claim 31), and a tear resistance of less than about 0.44 pounds force, a percent elongation at break of at least about 20%, and an adhesion force to an underlying surface material of greater than about 0.015 pounds force (claim 32) (specification, page 9, lines 3-11; page 11, lines 4-6).

Claim 33 defines the radiation cured encapsulating material of claim 29 as formed by radiation curing a composition comprising from about 30 to about 80 weight percent of a polyether-based urethane acrylate oligomer, from about 1 to about 40 weight percent of isocyanurate monomer having a plurality of acrylate or methacrylate groups, and an effective amount of a photoinitiator for radiation curing the composition upon exposure to curing radiation (specification, page 14, lines 13-18; page 13, lines 20-21).

Claims 34-37 further define the radiation cured encapsulating material of claim 33. According to claim 34, the polyether-based urethane acrylate oligomer comprises a polypropylene glycol-based urethane acrylate oligomer (specification, page 13, lines 1-4). According to claim 35, the isocyanurate monomer comprises a triacrylate of trishydroxyethyl isocyanurate (specification, page 13, lines 23-24). According to claim 36, the material is formed by radiation curing a composition comprising from about 40 to about 75 weight percent of the polyether-based urethane acrylate oligomer, from about 10 to about 30 weight percent of the isocyanurate monomer, and from about 0.1 to about 20 weight percent of the photoinitiator (specification, page 14, line 18-page 15, line 2). According to claim 37, the material is formed by radiation curing a composition comprising from about 50 to about 70 weight percent of the polyether-based urethane acrylate oligomer, from about 15 to about 25 weight percent of the isocyanurate monomer, and from about 1 to about 10 weight percent of the photoinitiator (specification, page 14, line 18-page 15, line 2). Claim 37 further defines the material of claim 37, wherein the polyether-based urethane acrylate oligomer comprises a

polypropylene glycol-based urethane acrylate oligomer and the isocyanurate monomer comprises a triacrylate of trishydroxyethyl isocyanurate (specification, page 13, lines 1-4 and 23-24).

Claims 39-48 further define the radiation cured encapsulating material of claim 29. According to claims 39 and 40, the material has a tear resistance of less than about 1.10 pounds force and less than about 0.44 pounds force, respectively (specification, page 9, lines 3-6). According to claims 44-46, the material has a percent elongation at break of at least about 5%, at least about 10%, and at least about 20%, respectively (specification, page 11, lines 4-7). According to claim 47, the material has a tear resistance of less than about 1.10 pounds force and a percent elongation at break of at least about 10% (specification, page 9, lines 3-6; page 11, lines 4-7). According to claim 48, the material has a tear resistance of less than about 0.44 pounds force and a percent elongation at break of at least about 20% (specification, page 9, lines 3-6; page 11, lines 4-7).

Claims 49 and 50 further define the radiation cured encapsulating material of claim 33 as formed from a composition further comprising, respectively, a viscosity-reducing component in an amount sufficient to lower the viscosity of the composition (claim 49) and a coefficient of friction reducing component in an amount sufficient to lower the coefficient of friction of the radiation cured material (claim 50) (specification, page 15, lines 5-6; page 16, lines 9-11).

VI. GROUND OF REJECTION

The single ground of rejection on appeal for review by the Board is the rejection of claims 29-40 and 44-50 under 35 U.S.C. §102(e) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over the Szum U.S. Patent No. 6,240,230.

VII. ARGUMENTS

The radiation cured encapsulating materials defined by claims 29-40 and 44-50 are neither anticipated by nor rendered obvious over Szum. Accordingly, the rejection under 35 U.S.C. §102(e) or §103(a) should be reversed. Favorable action by the Board is respectfully requested.

A. The Examiner's Position

In rejecting claims 29-40 and 44-50 under 35 U.S.C. §102(e) or, in the alternative, under 35 U.S.C. §103(a), the Examiner asserted that Szum sets forth compositions that are substantially the same as or similar to that contemplated by Appellants' claims, whereby the compositions taught by Szum necessarily result in the claimed tear strength and adhesion force. Additionally, the Examiner asserted that Szum teaches his composition can have a modulus within Appellants' claimed range, referring to column 7, lines 62-67 and column 13, line 66.

B. Claims 29-40 and 44-50 Are Patentably Distinguishable From Szum

Independent claim 29 recites a radiation cured encapsulating material having a tear resistance of less than about 2.20 pounds force, an adhesion force to an underlying surface material of greater than about 0.0044 pounds force and a Young's modulus at 25°C of from about 3000 to about 15,000 psi. The materials of the invention provide a good balance of competing properties so that the material exhibits good adhesion but can but torn in a predictable manner in the field. That is, it has been difficult to obtain reliable splitting of optical fiber ribbons into subunits as uneven tearing or splitting of conventional matrix materials and/or optical fiber damage often results. However, the presently claimed radiation cured encapsulating materials having the specific combination of tear resistance, adhesion force and Young's modulus may be used to provide a matrix material which allows reliable tearing or splitting of subunit ribbons while also exhibiting robust handling properties and

resisting cracking and/or delamination of the material, thereby exhibiting a good balance of competing properties.

Szum is directed to radiation-curable compositions which are substantially non-yellowing after curing (Abstract). Szum broadly discloses radiation curable compositions comprising 20 weight percent to about 80 weight percent of at least one urethane acrylate oligomer, about 20 weight percent to about 80 weight percent of at least one monomer diluent, and an effective amount of at least one photoinitiator. However, Szum specifically discloses that mechanical properties of the compositions and materials are effected by the selection of oligomer and by selection of reactive or monomer diluent (column 7, lines 1-3), and Szum provides no teaching or suggestion as to the tear resistance, adhesion force to an underlying surface material, or modulus required by claim 29, or specific compositions which will provide such properties. Particularly, Appellants find no teaching by Szum relating to either tear resistance or adhesion force, and the modulus properties of the compositions taught by Szum are significantly distinguishable from that required by claim 29.

More specifically, Szum discloses at column 7, lines 64-67 that rubbery modulus values can be at least 8 MPa and preferably greater than about 15 MPa and more preferably greater than about 25 MPa, corresponding to 1160, 2175 and 3625 psi. However, one of ordinary skill in the art will recognize that the rubbery modulus is not the Young's modulus, which is a tensile modulus, as recited in claim 29. The only teaching which Appellants find by Szum relating to a tensile modulus is in Examples 1 and 3 wherein the exemplary compositions are disclosed as exhibiting a tensile modulus of 973 MPa and 740 MPa, corresponding to 140,000 psi and 107,000 psi, respectively, values which are significantly greater than the Young's modulus of from about 3000 to about 15,000 psi recited in claim 29. Similarly, at column 13, line 66, reference is merely made to a coating having a modulus less than about 2,000 psi, without any indication as to what type of modulus is indicated or what

composition provides such a modulus. Again, Appellants find no teaching or suggestion by Szum relating to a Young's (tensile) modulus in the range of from 3,000 to 15,000 psi as required by claim 29, or a composition which exhibits such a Young's modulus, particularly in combination with tear resistance and adhesion properties as recited in claim 29. Thus, Szum fails to disclose materials exhibiting the combination of properties required by claim 29, including a Young's modulus of from about 3,000 to about 15,000 psi, and in fact discloses materials having a significantly different tensile modulus as compared with that required by claim 29.

The Examiner has asserted that a composition that is substantially the same as or similar to that contemplated by Appellants in claims 33-38 necessarily results in the requisite tear strength and adhesion force, whereby the compositions disclosed by Szum inherently exhibit the tear resistance and adhesion force recited in claim 29. However, rejection for anticipation or lack of novelty requires, as the first step in the inquiry, that all of the elements of the claimed invention be described in a single reference, and that the reference must describe the Applicants' claimed invention sufficiently to have placed a person of ordinary skill in the field of the invention in possession of it, *In re Spada*, 911 F.2d 705, 708, 15 U.S.P.Q. 2d 1655, 1657 (Fed. Cir. 1990). The general disclosures of Szum relating to radiation curable compositions comprising 20 weight percent to about 80 weight percent of at last one urethane acrylate oligomer, about 20 weight percent to about 80 weight percent of one monomer diluent, and an effective amount of at least one photoinitiator, do not sufficiently describe Appellants' claimed invention to place a person of ordinary skill in the field of the invention in possession of it, particularly since Szum acknowledges that the mechanical properties of the compositions and materials are effected by the selection of oligomer and by selection of reactive or monomer diluent (column 7, lines 1-3), but provides

no teaching or suggestion as to the particular selection of components sufficient to provide a composition having the properties recited in claim 29.

On the other hand, the specific teachings of Szum, as set forth in the Szum examples, clearly do not anticipate or render obvious the presently claimed materials in view of the significant difference in Young's modulus, namely 140,000 psi and 107,000 psi, respectively, of examples 1 and 3, as compared with the Young's modulus in the range of from 3,000 to 15,000 psi required by claim 29. Thus, Szum does not disclose a composition that is substantially the same as similar to that disclosed by Appellants or resulting in the claimed combination of properties.

It is well established that the disclosure of a genus in the prior art is not necessarily a disclosure of every species that is a member of that genus, *In re Baird*, 16 F.3d 380, 382, 29 U.S.P.Q. 2d 1550 (Fed. Cir. 1994). Similarly, a prior art disclosure of a generic composition encompassing a vast number of compositions, including an Applicant's claimed compositions, does not by itself describe the Applicant's claimed compositions in the meaning of 35 U.S.C. §102; rather, such prior art reference must further provide a more specific, limited teaching relating to the claimed compositions in order to anticipate the same, *In re Petering*, 133 U.S.P.Q. 275 (C.C.P.A. 1962); *In re Ruschig*, 145 U.S.P.Q. 274 (C.C.P.A. 1965); *In re Arkley*, 172 U.S.P.Q. 524 (C.C.P.A. 1972). In view of the failure of Szum to more specifically disclose a composition along the lines of those exemplified in the present application as exhibiting a tear resistance, an adhesion force and a Young's modulus as recited in claim 29, Szum does not disclose a composition which inherently exhibits the combination of properties presently claimed.

To the contrary, as discussed above, the exemplary teachings of Szum disclose compositions which are significantly distinguishable in terms of Young's modulus from those exemplified in the present application. While the teachings of a reference are not limited to

examples, any assertion of inherency must surely be limited to the examples, as the broad teachings of Szum cannot support any anticipation rejection under 35 U.S.C. §102. Moreover, while independent claim 29 is not limited to the compositions of examples 1 and 2 set forth in the present specification, Appellants have presented these examples as exemplary of materials exhibiting the properties recited in claim 29, and the failure of Szum to teach such compositions demonstrates the failure of Szum to inherently disclose compositions exhibiting the combination of properties required by present claim 29. Thus, Szum does not anticipate claim 29, or any of claims 30-40 and 44-50 dependent thereon, under 35 U.S.C. §102.

Further, the fact that a claimed invention may be encompassed by a disclosed generic formula does not by itself render that invention obvious, *In re Baird, supra.*, citing *In re Jones*, 958 F.2d 347, 350, 21 U.S.P.Q. 2d 1941, 1943 (Fed. Cir. 1992). In this regard, in order to render a claimed invention obvious, the prior art must enable one skilled in the art to make and use the claimed invention, *Motorola, Inc. v. InterDigital Tech. Corp.*, 43 U.S.P.Q.2d 1481, 1489 (Fed. Cir. 1997). As noted above, Szum fails to provide any specific teaching or suggestion of a combination of components which provides a cured material exhibiting the combination of properties recited in claim 29. To the contrary, Szum's specific exemplary compositions teach away from cured materials having a combination of properties as recited in claim 29. In view of these deficiencies in the teachings, Szum does not enable one skilled in the art to make and use a radiation cured encapsulating material having the combination of properties required by claim 29. Thus, Szum does not render the presently claimed materials obvious under 35 U.S.C. §103.

Therefore, the claimed radiation cured encapsulating materials are neither anticipated by nor rendered obvious over Szum, whereby the rejection under 35 U.S.C. §102(e) or 103(a) should be reversed. Favorable action is respectfully requested.

C. Claims 30-32, 39, 40 and 44-48 Are Independently Patentable

Each of dependent claims 30-32, 39, 40 and 44-48 recite an additional property or a more specific parameter of the properties of the radiation cured encapsulating material defined by claim 29. Appellants submit that Szum provides no teaching or suggestion of any composition having the combination of properties respectively required by any of claims 30-32, 39, 40 and 44-48. Further, Appellants find no teaching by Szum as to how to modify the exemplary compositions set forth therein to result in such materials. Thus, Szum neither anticipate the respective materials defined by claims 30-32, 39, 40 and 44-48 under 35 U.S.C. §102, nor renders the radiation cured encapsulating material respectively defined by these claims obvious in view of the failure to enable one skilled in the art to make and use such materials. Accordingly, the rejection under 35 U.S.C. §102 or §103 of claims 30-32, 39, 40 and 44-48 should be reversed. Favorable action is respectfully requested.

D. Claims 37-38 Are Independently Patentable

Claim 37 recites that the radiation cured encapsulating material is formed by radiation curing a composition comprising from about 50 to about 70 weight percent of the polyether-based urethane acrylate oligomer, from about 15 to about 25 weight percent of the isocyanurate monomer, and from about 1 to about 10 weight percent of the photoinitiator. Claim 38 depends from claim 37 and further recites that the polyether-based urethane acrylate oligomer comprises a polypropylene glycol-based urethane acrylate oligomer and the isocyanurate monomer comprises a triacrylate of trishydroxyethyl isocyanurate.

To the contrary, Appellants find no teaching by Szum relating to a composition as specifically defined by claim 37 or claim 38. To the contrary, the generic compositions taught by Szum are not sufficiently specific to anticipate these claims, *In re Baird, supra.*, nor do the exemplary compositions of Szum include ingredients within the requirements of these claims. Thus, Szum does not anticipate claims 37 and 38 under 35 U.S.C. §102.

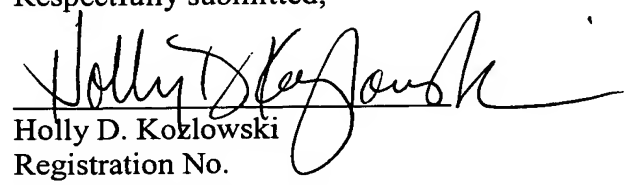
Further, Appellants find no suggestion by Szum that selection of specific components and amounts from the generic composition description of Szum or modification of the exemplary compositions of Szum along the lines of claims 37 and 38 will provide a composition having the combination of properties as recited in claim 29, from which these claims depend. In view of these deficiencies, Szum does not render the radiation cured encapsulating materials of claims 37 and 38 obvious under 35 U.S.C. §103.

Therefore, the claimed radiation cured encapsulating materials of claims 37 and 38 are neither anticipated by nor rendered obvious over Szum, whereby the rejection under 35 U.S.C. §102 or §103 should be reversed. Favorable action is respectfully requested.

IV. CONCLUSIONS

For the reasons set forth in detail above, the radiation cured encapsulating materials defined by claims 29-40 and 44-50 are neither anticipated by nor rendered obvious over Szum, whereby the rejection under 35 U.S.C. §102(e) or §103(a) should be reversed. Favorable action by the Board is respectfully requested.

Respectfully submitted,



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CLAIMS APPENDIX

29. A radiation cured encapsulating material having a tear resistance of less than about 2.20 pounds force, an adhesion force to an underlying surface material of greater than about 0.0044 pounds force, and a Young's modulus at 25°C in the range of from about 3000 to about 15,000 psi.

30. A radiation cured encapsulating material as defined by claim 29, having a percent elongation at break of at least about 5%.

31. A radiation cured encapsulating material as defined by claim 30, having a tear resistance of less than about 1.10 pounds force, a percent elongation at break of at least about 10%, and an adhesion force to an underlying surface material of greater than about 0.011 pounds force.

32. A radiation cured encapsulating material as defined by claim 30, having a tear resistance of less than about 0.44 pounds force, a percent elongation at break of at least about 20%, and an adhesion force to an underlying surface material of greater than about 0.015 pounds force.

33. A radiation cured encapsulating material as defined by claim 29, formed by radiation curing a composition comprising from about 30 to about 80 weight percent of a polyether-based urethane acrylate oligomer, from about 1 to about 40 weight percent of isocyanurate monomer having a plurality of acrylate or methacrylate groups, and an effective

amount of a photoinitiator for radiation curing the composition upon exposure to curing radiation.

34. A radiation cured encapsulating material as defined by claim 33, wherein the polyether-based urethane acrylate oligomer comprises a polypropylene glycol-based urethane acrylate oligomer.

35. A radiation cured encapsulating material as defined by claim 33, wherein the isocyanurate monomer comprises a triacrylate of trishydroxyethyl isocyanurate.

36. A radiation cured encapsulating material as defined by claim 33, formed by radiation curing a composition comprising from about 40 to about 75 weight percent of the polyether-based urethane acrylate oligomer, from about 10 to about 30 weight percent of the isocyanurate monomer, and from about 0.1 to about 20 weight percent of the photoinitiator.

37. A radiation cured encapsulating material as defined by claim 33, formed by radiation curing a composition comprising from about 50 to about 70 weight percent of the polyether-based urethane acrylate oligomer, from about 15 to about 25 weight percent of the isocyanurate monomer, and from about 1 to about 10 weight percent of the photoinitiator.

38. A radiation cured encapsulating material as defined by claim 37, wherein the polyether-based urethane acrylate oligomer comprises a polypropylene glycol-based urethane acrylate oligomer and the isocyanurate monomer comprises a triacrylate of trishydroxyethyl isocyanurate.

39. A radiation cured encapsulating material as defined by claim 29, having a tear resistance of less than about 1.10 pounds force.

40. A radiation cured encapsulating material as defined by claim 29, having a tear resistance of less than about 0.44 pounds force.

44. A radiation cured encapsulating material as defined by claim 29, having a percent elongation at break of at least about 5%.

45. A radiation cured encapsulating material as defined by claim 29, having a percent elongation at break of at least about 10%.

46. A radiation cured encapsulating material as defined by claim 29, having a percent elongation at break of at least about 20%.

47. A radiation cured encapsulating material as defined by claim 29, having a tear resistance of less than about 1.10 pounds force and a percent elongation at break of at least about 10%.

48. A radiation cured encapsulating material as defined by claim 29, having a tear resistance of less than about 0.44 pounds force and a percent elongation at break of at least about 20%.

49. A radiation cured encapsulating material as defined by claim 33, wherein the composition further comprises a viscosity-reducing component in an amount sufficient to lower the viscosity of the composition.

50. A radiation cured encapsulating material as defined by claim 33, wherein the composition further comprises a coefficient of friction reducing component in an amount sufficient to lower the coefficient of friction of the radiation cured material.

EVIDENCE APPENDIX

There is no evidence relied upon in the present Appeal Brief.

RELATED PROCEEDINGS APPENDIX

There are no proceedings related to the present appeal.